

REMARKS

Claims 1, 13, and 22 have been amended. The paragraph in the specification beginning at page 3, line 3, has been amended to correct typographical errors. No new matter has been added. Claims 1-79 are pending.

Rejections Under 35 U.S.C. § 112

Claims 22, 25, and 26 have been rejected under 35 U.S.C. § 112, ¶ 2. (Office Action at 3). Claim 22 has been amended to address the issues raised by the Examiner. Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 112, ¶ 2.

Rejections Under 35 U.S.C. § 102

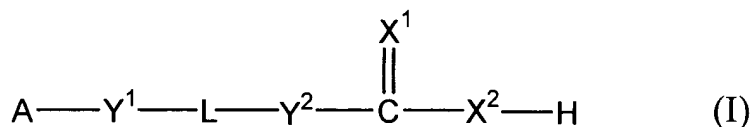
Patel

Applicants thank the Examiner for withdrawing the prior rejection under 35 U.S.C. § 102(b) as being anticipated by Patel *et al.* (Journal of Organic Chemistry 1978, 43(26) pages 5018-5020) ("Patel"). (Office Action at 2, ¶ 7). The Examiner nonetheless contends the following:

Applicant has argued (Amendment, page 4, 3rd full paragraph - page 5, end of 2nd full paragraph) that the group L is required to be substituted in the previous claims 1 and 22 and that, therefore, Patel does not anticipate the claims since in the 7-phenyl-2,4,6-heptatrienoic acid disclosed does not contain a substituted hydrocarbon chain. The Examiner disagrees and points out that the phenyl group representing the variable group A constitutes the required substitution ("monocyclic aryl") of the hydrocarbon chain.

(Office Action at 2-3, ¶ 8).

Applicants have discovered compounds of formula (I):



In the compound of formula (I), when hydrocarbon chain L contains three double bonds, said hydrocarbon chain is further substituted with C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₁₋₄ alkoxy, hydroxyl, halo, amino, nitro, cyano, C₃₋₅ cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C₁₋₄ alkylcarbonyloxy, C₁₋₄ alkyloxycarbonyl, C₁₋₄ alkylcarbonyl, or formyl. See independent claim 1. Alternatively, when L contains three double bonds, said

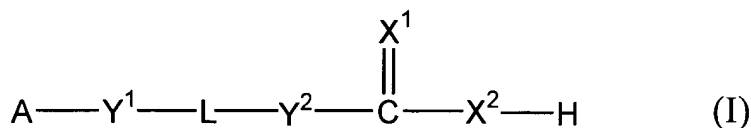
hydrocarbon chain is substituted with C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₁₋₄ alkoxy, or amino. See independent claim 22.

In the 7-phenyl-2,4,6-heptatrienoic acid disclosed in Patel, Applicants agree with the Examiner that the phenyl group represents the variable group A. Applicants note, however, that the hydrocarbon chain in 7-phenyl-2,4,6-heptatrienoic acid is not further substituted with C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₁₋₄ alkoxy, hydroxyl, halo, amino, nitro, cyano, C₃₋₅ cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C₁₋₄ alkylcarbonyloxy, C₁₋₄ alkylloxycarbonyl, C₁₋₄ alkylcarbonyl, or formyl, nor is it substituted with C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₁₋₄ alkoxy, or amino. Thus, for at least the reasons discussed above, independent claims 1 and 22, and claims that depend therefrom, are not anticipated by Patel. Applicants respectfully request reconsideration and withdrawal of this rejection.

Harding

Claims 1-5, 12, 13, and 22 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Harding *et al.* (Journal of Organic Chemistry 1981, 46, pages 940-948) ("Harding"). (Office Action at 3-4). The Examiner contends that Harding discloses the synthesis of 4-phenoxyacetic acid, and that Harding thus anticipates claims 1-5, 12, 13, and 22. (Office Action at 4).

Applicants have discovered compounds of formula (I):



In the compound of formula (I), L is a straight C₃₋₁₂ hydrocarbon chain optionally containing at least one double bond and being optionally substituted. When L contains one double bond and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y¹ is not a bond or CH₂, and Y² is not a bond or CH₂. See independent claims 1 and 22.

In 4-phenoxyacetic acid, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is a bond, and L contains 3 carbon atoms in the hydrocarbon chain. 4-phenoxyacetic acid is not a compound of formula (I) in which, when L contains one double bond and A is C₁₋₄ alkyl

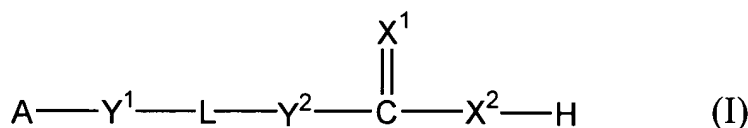
phenyl or unsubstituted phenyl, Y² is not a bond or CH₂. Thus, Harding does not describe a compound of independent claims 1 or 22.

For at least the reasons discussed above, independent claims 1 and 22, and claims that depend therefrom, are not anticipated by Harding. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection over Harding.

Broughton

Claims 1-5, 7, 8, 12, 13, 16, 17, 22, 25, and 26 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Broughton *et al.* (GB 2 005 271-A 04-1979) ("Broughton"). (Office Action at 4). The Examiner contends that Broughton discloses, for example, compounds BA-BC, and their use as pesticides, and that Broughton therefore anticipates, for example, claims 1-5, 7, 8, 12, 13, 16, 17, 22, and 26. (Office Action at 4).

Applicants have discovered compounds of formula (I):



In the compound of formula (I), when L contains one double bond and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y¹ is not a bond or CH₂, and Y² is not a bond or CH₂. See independent claims 1 and 22.

In compound BA of Broughton, A is phenyl, each of X¹ and X² is oxygen, each of Y¹ and Y² is a bond, and L contains 10 carbon atoms in the hydrocarbon chain. Alternatively, in compound BA of Broughton, A is phenyl, each of X¹ and X² is oxygen, Y¹ is a bond, Y² is CH₂, and L contains 9 carbon atoms in the hydrocarbon chain. Compound BA of Broughton is not a compound of formula (I) in which, when L contains one double bond and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y² is not a bond or CH₂.

In compound BB of Broughton, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is a bond, and L contains 9 carbons in the hydrocarbon chain. Alternatively, in compound BB of Broughton, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is CH₂, and L contains 8 carbons in the hydrocarbon chain. Compound BB of Broughton is not a compound of formula (I) in which, when L contains one double bond and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y² is not a bond or CH₂.

In compound BC of Broughton, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is a bond, and L contains 11 carbons in the hydrocarbon chain. Alternatively, in compound BB of Broughton, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is CH₂, and L contains 10 carbons in the hydrocarbon chain. Compound BC of Broughton is not a compound of formula (I) in which, when L contains one double bond and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y² is not a bond or CH₂.

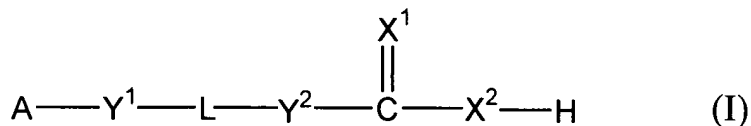
In sum, compounds BA-BC of Broughton are not compounds of formula (I) in which, when L contains one double bond and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y² is not a bond or CH₂. Thus, Broughton does not describe a compound of independent claims 1 or 22.

For at least the reasons discussed above, independent claims 1 and 22, and claims 2-5, 7, 8, 12, 13, 16, 17, 25, and 26 that depend therefrom, are not anticipated by Broughton. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection over Broughton.

Gordon

Claims 1-5, 12, 13, and 22 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Gordon *et al.*, U.S. Patent No. 5,747,537 ("Gordon"). (Office Action at 4). The Examiner contends that Gordon discloses the synthesis of 9-phenoxy-nonanoic acid, and that Gordon thus anticipates claims 1-5, 12, 13, and 22. (Office Action at 4).

Applicants have discovered compounds of formula (I):



In the compound of formula (I), when L contains no double bonds and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y¹ is not a bond or CH₂, and Y² is not a bond or CH₂. See independent claims 1 and 22.

In 9-phenoxy-nonanoic acid, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is a bond, and L contains 8 carbon atoms in the hydrocarbon chain. Alternatively, in 9-phenoxy-nonanoic acid, A is phenyl, each of X¹ and X² is oxygen, Y¹ is oxygen, Y² is CH₂, and L contains 7 carbons in the hydrocarbon chain. 9-phenoxy-nonanoic acid is not a compound of formula (I) in which, when L contains no double bonds and A is C₁₋₄ alkyl phenyl or

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unsubstituted phenyl, Y² is not a bond or CH₂. Thus, Gordon does not describe a compound of independent claims 1 or 22.

For at least the reasons discussed above, independent claims 1 and 22, and claims that depend therefrom, are not anticipated by Gordon. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection over Gordon.

CONCLUSION

Attached is a marked-up version of the changes being made by the current amendment. Applicants ask that all claims be allowed. Please apply any necessary charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the specification:

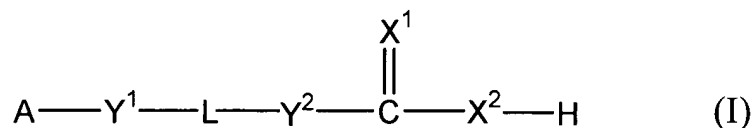
Paragraph beginning at page 3, line 3 has been amended as follows:

--In certain embodiments, A can be a C5-8 cycloalkenyl or 5-8 membered heteroalkenyl containing at least two double bonds, A can be phenyl, naphthyl, indanyl, or tetrahydronaphthyl, or A can be phenyl optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, or amino.--

In the claims:

Claims 1, 13, and 22 have been amended as follows:

--1. (Amended) A compound of formula (I):



wherein

A is a cyclic moiety selected from the group consisting of C₃₋₁₄ cycloalkyl, 3-14 membered heterocycloalkyl, C₄₋₁₄ cycloalkenyl, 3-14 membered heterocycloalkenyl, aryl, and heteroaryl; the cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxyl, hydroxylalkyl, halo, haloalkyl, amino, alkylcarbonyloxy, alkyloxycarbonyl, alkylcarbonyl, alkylsulfonylamino, aminosulfonyl, or alkylsulfonyl;

each of X¹ and X², independently, is O or S;

each of Y¹ and Y², independently, is -CH₂-, -O-, -S-, -N(R^a)-, -N(R^a)-C(O)-O-, -O-C(O)-N(R^a)-, -N(R^a)-C(O)-N(R^b)-, -O-C(O)-O-, or a bond; each of R^a and R^b, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl;

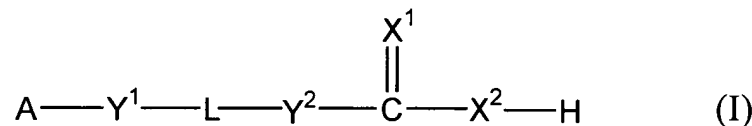
L is a straight C₃₋₁₂ hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₁₋₄ alkoxy, hydroxyl,

halo, amino, nitro, cyano, C₃₋₅ cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C₁₋₄ alkylcarbonyloxy, C₁₋₄ alkyloxycarbonyl, C₁₋₄ alkylcarbonyl, or formyl; and further being optionally interrupted by -O-, -N(R^c)-, -N(R^c)-C(O)-O-, -O-C(O)-N(R^c)-, -N(R^c)-C(O)-N(R^d)-, or -O-C(O)-O-; each of R^c and R^d, independently, being hydrogen, alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, hydroxyl, or haloalkyl; provided that when L contains two or more double bonds, the double bonds are not adjacent to each other; that when L contains three double bonds, said hydrocarbon chain is **further** substituted with C₁₋₄ alkyl, C₂₋₄ alkenyl, C₂₋₄ alkynyl, C₁₋₄ alkoxy, hydroxyl, halo, amino, nitro, cyano, C₃₋₅ cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C₁₋₄ alkylcarbonyloxy, C₁₋₄ alkyloxycarbonyl, C₁₋₄ alkylcarbonyl, or formyl; and further provided that when L contains **zero, one, or two conjugated double bonds [7 carbon atoms or fewer in the hydrocarbon chain]** and A is C₁₋₄ alkyl phenyl or unsubstituted phenyl, Y¹ is not a bond or CH₂, **and Y² is not a bond or CH₂**;

or a salt thereof.--

--13. (Amended) The compound of claim 1, wherein A is phenyl optionally substituted with alkyl, alkenyl, hydroxyl, hydroxylalkyl, halo, haloalkyl, or amino.--

--22. (Amended) A compound of formula (I):



wherein

A is a cyclic moiety selected from the group consisting of aryl and heteroaryl; the cyclic moiety being optionally substituted with alkyl, alkenyl, alkynyl, alkoxy, hydroxylalkyl, or amino;

each of X¹ and X², independently, is O or S;

each of Y^1 and Y^2 , independently, is $-CH_2-$, $-O-$, $-S-$, $-N(R^a)-$, $-N(R^a)-C(O)-O-$, $-O-C(O)-N(R^a)-$, $-N(R^a)-C(O)-N(R^b)-$, $-O-C(O)-O-$, or a bond; each of R^a and R^b , independently, being hydrogen, alkyl, hydroxylalkyl, or haloalkyl;

L is a straight C_{3-12} hydrocarbon chain optionally containing at least one double bond, at least one triple bond, or at least one double bond and one triple bond; said hydrocarbon chain being optionally substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxy, or amino, and further optionally interrupted by $-O-$ or $-N(R^c)-$, where R^c is hydrogen, alkyl, hydroxylalkyl, or haloalkyl; provided that when L contains two or more double bonds, the double bonds are not adjacent to each other; that when L contains three double bonds, said hydrocarbon chain is substituted with C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxy, **[hydroxyl, halo,] or amino[, nitro, cyano, C_{3-5} cycloalkyl, 3-5 membered heterocycloalkyl, monocyclic aryl, 5-6 membered heteroaryl, C_{1-4} alkylcarbonyloxy, C_{1-4} alkyloxycarbonyl, C_{1-4} alkylcarbonyl, or formyl]**; and further provided that when L contains **zero, one, or two conjugated double bonds** **[7 carbon atoms or fewer in the hydrocarbon chain]** and A is C_{1-4} alkyl phenyl or unsubstituted phenyl, Y^1 is not a bond or CH_2 , **and Y^2 is not a bond or CH_2** ;
or a salt thereof.--